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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,155	02/21/2006	Firoz D. Antia	21459YP	1662
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EXAMINER ARNOLD, ERNST V				
ART UNIT		PAPER NUMBER		
1616				
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04/10/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/569,155

**Applicant(s)**

ANTIA ET AL.

**Examiner**

ERNST V. ARNOLD

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) 3-14 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 2 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 21 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/S5108)  
Paper No(s)/Mail Date 2/21/06  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-14 are pending in the application.

In the response filed on 1/11/08, Applicant elected with traverse Invention group I, claims 1 and 2, for prosecution on the merits. Applicant traversed that it would not be a serious burden to search and examine the application in its entirety. The Examiner cannot agree. As stated in the restriction requirement, the inventions are distinct from one another and a search for one would not necessarily cover a search for another and would present a serious burden for the Examiner. Therefore, the present Examiner is making the restriction FINAL.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

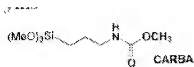
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Husing et al. (Chem Mater. 1998, 10, 3024-3032) as evidenced by Schubert (J. Chem Soc. Dalton Trans 1996 pp 3343-3348).

Husing et al. disclose monolithic **silica aerogels** modified by functional organic groups (Abstract). Husing et al. disclose the functional organic groups as including the following structure on page 3025, Scheme 1:

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Schubert discloses that chemical modification of silica aerogels with functional organic groups results in this structure on page 3347, Figure 4;



**organofunctional  
modification**

As is shown in the cartoon figure, the functional group "A" is attached to a sphere of  $\text{SiO}_2$ . Therefore, the Examiner can only conclude that the silica aerogels of Husing et al. have the structure disclosed by Schubert where "A" in the structure of Schubert is CARBA of Husing et al. thus meeting the limitations of instant claims 1 and 2.

With respect to the art rejection above, it is noted that the reference does not teach that the composition can be used in the manner instantly claimed, stationary phase, however, the intended use of the claimed composition does not patentably distinguish the composition, per se, since such undisclosed use is inherent in the reference composition. In order to be limiting, the intended use must create a structural difference between the claimed composition and the prior art composition. In the instant case, the intended use does not create a structural difference, thus the intended use is not limiting.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

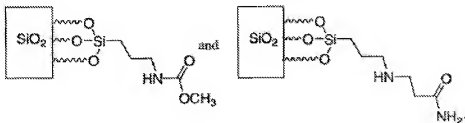
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waddel et al. (JACS 1981, 103, 5303-5307) in view of Lee (US 4874520) and Pike et al. (US 3,033,815) and Husing et al. (Chem Mater. 1998, 10, 3024-3032).

Applicant claims:

2. The stationary phase of Formula I, as recited in Claim 1, selected from the group consisting of:



**Determination of the scope and content of the prior art**

**(MPEP 2141.01)**

Waddell et al. teach organosilane to silica surface bonding and immobilized organosilanes and their numerous applications (Abstract and page 5303, left column).  
Waddell et al. teach methods of preparation (page 5304, results and discussion).  
Waddell et al. teach silica gel surfaces modified with aminopropylsilane (page 5304, results and discussion).

Lee teaches in column 1, lines 30-35;

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In reverse phase chromatography the stationary phase is made nonpolar or hydrophobic. The strongest sorption occurs from polar eluents. Reversed phases are most often prepared by reacting silica gel with chlorosilanes or alkoxysilanes.

Pike et al. teach preparation gamma-(N-2-amidoethyl)aminopropyltriethoxysilane in column 9, line 55 through column 10 line 5).

The reference of Husing et al. is discussed in detail above and that discussion is hereby incorporated by reference.

**Ascertainment of the difference between the prior art and the claims**

**(MPEP 2141.02)**

1. The difference between the instant application and Waddell et al. is that Waddell et al. do not expressly teach the instantly claimed siloxanes on a silica surface. This deficiency in Waddell et al. is cured by the teachings of Lee and Pike et al. and Husing et al.

**Finding of prima facie obviousness**

**Rational and Motivation (MPEP 2142-2143)**

1. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the siloxanes of Pike et al. or Husing et al. in the method of modifying silica surfaces of Waddell et al. to make the product, as suggested by Lee and Pike et al., and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Lee establishes that it is common to treat silica gel with trialkoxysilanes and Pike et al. and Husing et al. both teach various trialkoxysilanes. The predictable expected result is a silica gel surface with the appropriate siloxane of Pike et al. or Husing et al. attached to the surface. The concept of tethering modified siloxanes to silica gel is taught in the art. Applicant has merely picked yet another modified siloxane and attached it to a silica surface.

From recent case law: "the results of ordinary innovation are not the subject of exclusive rights under the patent laws." (KSR INTERNATIONAL CO. v. TELEFLEX INC. ET AL. 550 U. S. \_\_\_\_ (2007) page 24).

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### ***Conclusion***

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ernst V Arnold/  
Examiner, Art Unit 1616